# OPERATOR MANUAL

# Castle 7620 WASHER

**FILE CREATED: 5/98**

Information contained herein is applicable to units manufactured between 1/97 and 5/98. Previous/future units may vary.

GETINGE Castle

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## DESCRIPTION OF SYMBOLS & NOTES IN MANUAL

The following symbols with related notes appear in this manual.

*"Warning" notes alert the user to the possibility of personal injury.*

*"Caution" notes alert the user to the possibility of damage to the equipment.*

*"Notes" alert the user to pertinent facts and conditions.*

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# GENERAL DESCRIPTION

## INTRODUCTION

The Castle 7620 Washer is a compact unit designed to clean surgical instruments, laboratory glassware, metalware and utensils. It may be installed on a work counter, under a counter, or on a freestanding base cabinet.

The unit features a 20"W x 20"D x 15"H load area within its wash chamber. A fixed track assembly and a removable grid are provided as standard equipment. When in position, the grid will support a 20" x 20" (or smaller) utensil basket, instrument tray, or assorted loose items. With the grid removed, the fixed track assembly will support a compatible roll-out basket grid, or various sized Spindle Headers.

Wash and rinse spray treatments are provided by means of two spinning manifolds, one located above and one below the load area. When used, a Spindle Header coupled directly to the high pressure plumbing system effectively subjects the interior of ware to the wash and rinse spray treatments.

Processing cycles are controlled by a programmable microprocessor-based controller that will store four pre-programmed cycles. The operator needs only to select and start an appropriate cycle.

Standard cycle phases provide for a Prewash, a Wash, and two successive tap water Rinse treatments followed by a third and final Rinse of purified water (DI). As an optional treatment, instrument lubricant (MILK) may be incorporated into the final Rinse.

All treatment solutions are used once and drained.

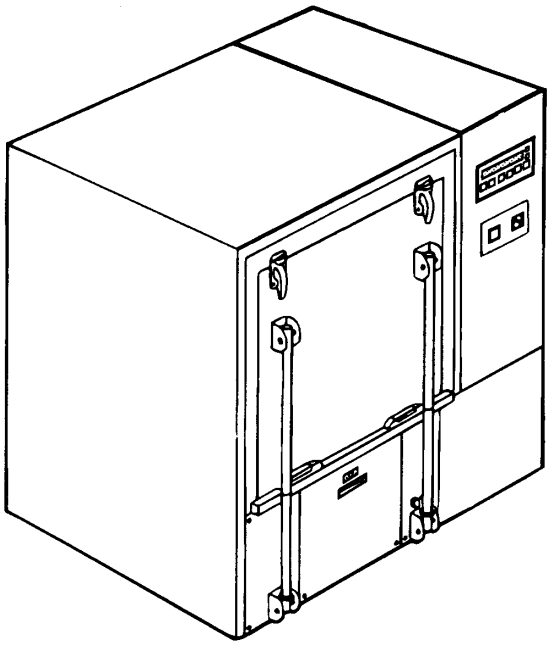

FIGURE 1-1: CASTLE 7620 WASHER

## EXTERIOR COMPONENTS

(Ref: Figure 1-2)

**Power ON-OFF/RESET Switch**

Activates and deactivates the Washer controls. A green light will illuminate the switch when it is in the ON position.

**Cycle START Push Button**

Starts the processing cycle when pressed.

**Controller**

Microprocessor-based controller that features an LCD message screen, six Function and two Selector Keys. Refer to 2. Microprocessor Controller on page 2-1 for a detailed description of this component.

**Access Plates: Side (Upper & Lower)**

Permits access to the interior components located behind and beneath the Washer controls.

**Service Access Panel: Bottom**

Permits access to the interior components located beneath the Washer chamber.

**Door**

Opens at the top. Hinged at the bottom. Lowers to the horizontal position for access to the Washer chamber.

**Safety Interlock Switch**

Stops all machine functions if the door is opened during Washer operation.

**Door Latch**

Secures the door in the closed position. Two manually operated latches are provided.

**Door Support Rod**

Supports the door when it is lowered to the horizontal position. One rod is attached to each side of the door.

**Detergent Dispenser**

Automatically dispenses detergent into the reservoir tank at the start of the Wash phase of the processing cycle. This Dispenser may be remotely located or mounted to the back of the unit.

**Detergent-Lubricant Dispenser(Option)**

Automatically dispenses detergent into the reservoir tank at the start of the Wash phase of the processing cycle. An additional pump automatically dispenses instrument lubricant (Option) into the rinse water supply line at the start of the final Rinse (DI) phase of the processing cycle. This Dispenser may be remotely located or mounted to the back of the unit.

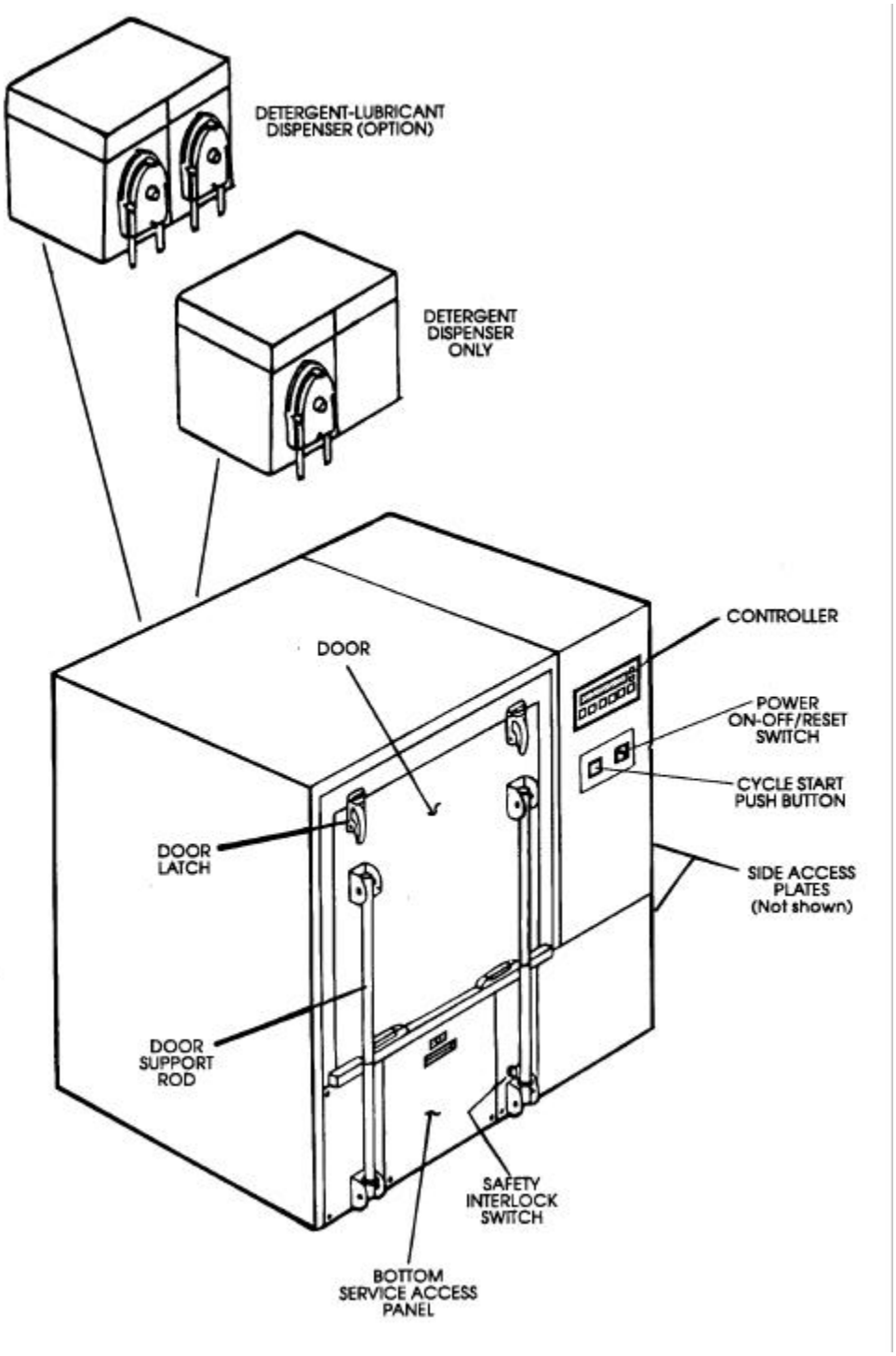


FIGURE 1-1: EXTERIOR COMPONENTS

## CHAMBER COMPONENTS

(See Figure: 1- 3)

**Spinning Manifold: Top**

Delivers a rotary spray of detergent and rinse water down over the load.

**Spinning Manifold: Bottom**

Delivers a rotary spray of detergent and rinse water up against the load.

**Spindle Header Coupling (Option)**

Enables the connection of hollow tube Spindle Headers to the detergent and rinse water plumbing system for the purpose of subjecting the interior of ware to processing treatments. When Headers are not used a check valve within the Coupling automatically closes so that pressurized treatments are delivered through the spinning manifolds only.

**Water Fill Port**

Point at which the fresh water supply empties into the chamber for the purpose of filling the Reservoir Tank.

**Detergent Port**

Point at which the liquid detergent is dispensed into the chamber.

**Item Lubricant Port (Option)**

Point at which the item lubricant (Milk) is dispensed into the chamber - when that option is provided.

**Reservoir Tank**

Alternately holds the detergent and rinse water supplies during a processing cycle. Capacity: 2-1/2 gallons.

**Drain Screen**

Prevents large particles of foreign matter from being carried into the Reservoir Tank. The Screen can be removed by hand.

**Door Gasket**

Provides a door-to-chamber seal when the door is in the closed position.

**Bottom Grid**

A removable support designed to hold an instrument tray, basket, or loose items during Washer operation.

**Tracks**

Support the Bottom Grid. When the Grid is removed, the Tracks will accept a Spindle Header, or compatible roll-out Grid.

**Overflow Sensor**

Turns on the Washer's drain pump should one or more of the system's water fill components fail and an overflow condition result. See also: OVERFLOW MODE, page 3-6.

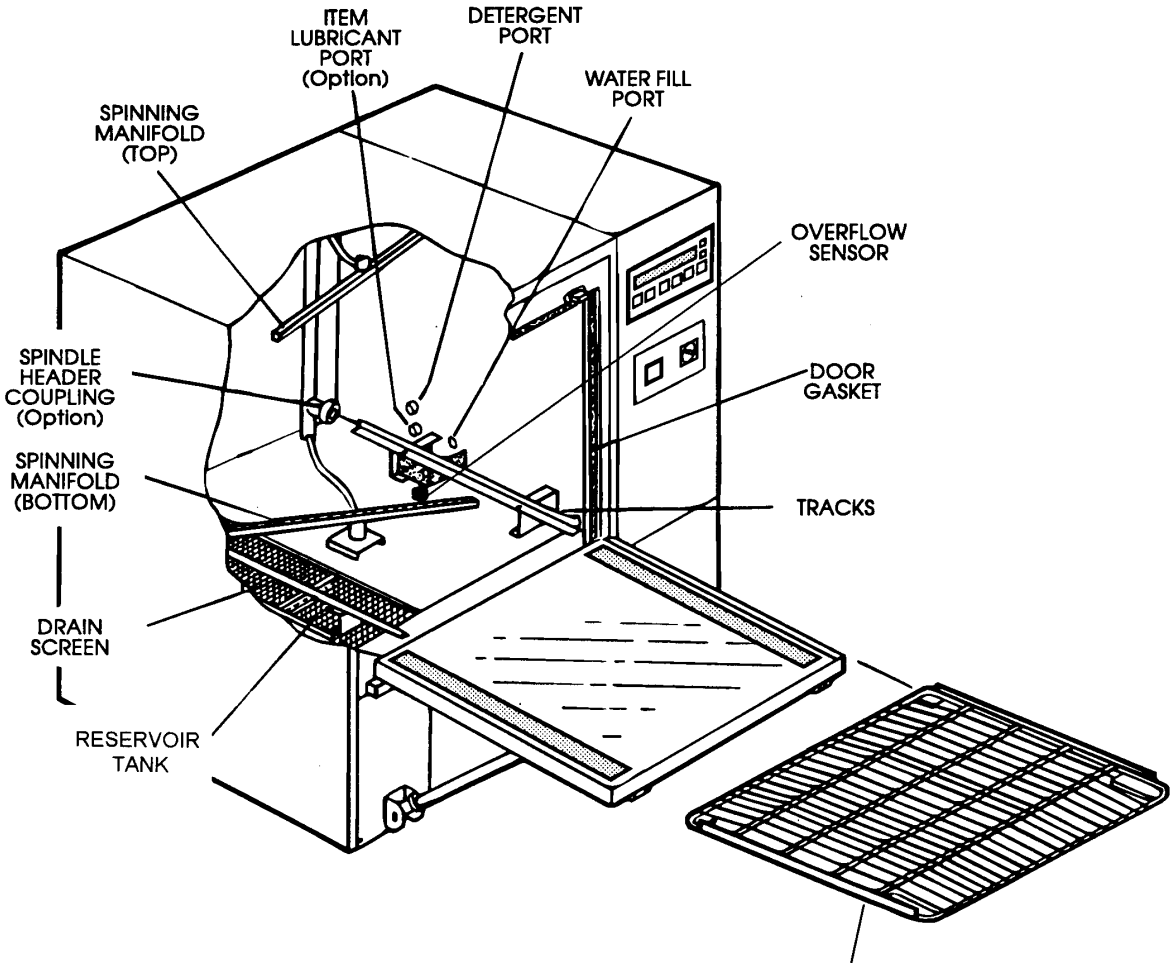


FIGURE 1-3: CHAMBER COMPONENTS

## PROCESSING CYCLE DESCRIPTION

The following is a description of the cycle phases available with the 7620 Washer, in the order in which they are programmed to function.

**Prewash**

Reservoir tank is filled with cold water. When tank is full, phase timing starts. Load is subjected to a recirculated, unheated water spray for the purpose of removing as much soil as possible prior to the use of the Alkali Wash detergent. When timing ends, the reservoir tank is drained. (Use of hot water instead of cold may be provided as an option.)

The duration of this phase (0 - 600 seconds) is programmed at the Controller.

**Wash**

Reservoir tank is refilled with heated water. Phase timing starts - detergent is automatically dispensed into the tank. Load is subjected to a recirculated detergent solution spray for the purpose of loosening/removing any soil that remains following the Prewash phase. Solution temperature is maintained by the reservoir heating system. When timing ends, the reservoir tank is drained.

The duration of this phase (120 - 600 seconds) and solution temperature (140-180 degrees F) are programmed at the Controller.

**Rinse-1**

Reservoir tank is refilled with hot water. Phase timing starts. Load is subjected to a recirculated rinse water spray for the purpose of removing any residue of detergent solution and loosened soil. Water temperature is not maintained by the reservoir heating system. When timing ends, the reservoir tank is drained.

The duration of this phase (0 - 600 seconds) is programmed at the Controller.

**Rinse-2**

Reservoir tank is refilled with hot water. Phase timing starts. Load is subjected to a second recirculated rinse water spray for the purpose of removing any residue of detergent solution and loosened soil. Water temperature is maintained by the reservoir heating system. When timing ends, the reservoir tank is drained.

The duration of this phase (0 - 600 seconds) and water temperature (140-180 degrees F) are programmed at the Controller.

**Final Rinse**

Reservoir tank is refilled with purified (DI) water. Phase timing starts. Load is subjected to a recirculated purified water spray for the purpose of removing any rinse water contaminants. Water temperature is maintained by the reservoir heating system. If water temperature should drop below setpoint, timing will be suspended until the water is heated back to setpoint. When timing ends, the reservoir tank is drained.

The duration of this phase (60 - 600 seconds) and water temperature (140-180 degrees F) are programmed at the Controller.

**Final Rinse Options**:

- Water supply may be tap water instead of purified water.
- Instrument Lubricant may be dispensed into the recirculating rinse water. This would occur during the final 20 seconds (recommended) of the phase.

**Cooling**

Washer stands idle for a 30-second period of draining and cooling.

*A processing cycle will end and the alarm will sound at the conclusion of Cooling.*

# MICROPROCESSOR CONTROLLER

## DESCRIPTION

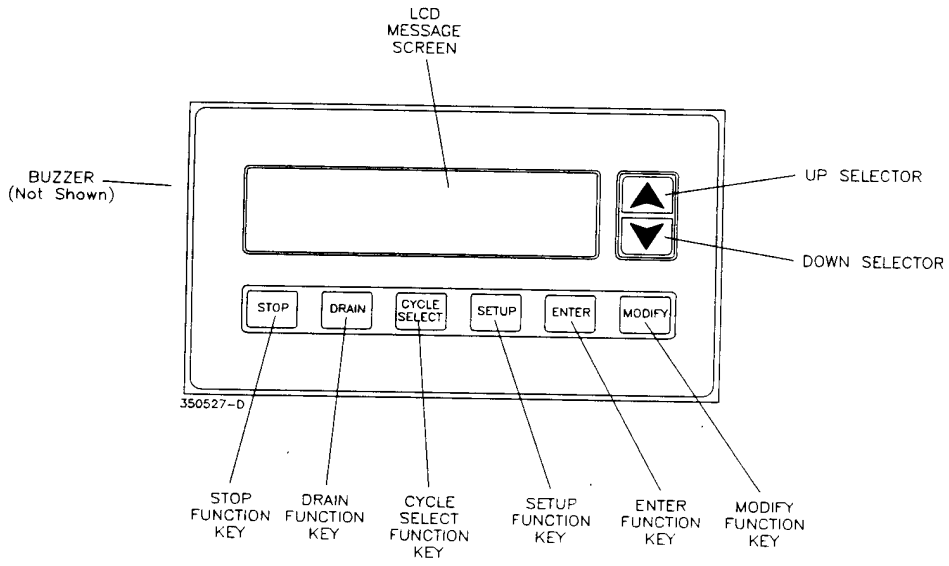


FIGURE 2-1: MICROPROCESSOR CONTROLLER

**STOP Function Key**

Terminates an ongoing cycle in the event of an emergency or any other situation that may require bringing operation of the Washer to an immediate halt. (See also: STOP, page 3-5.)

**DRAIN Function Key**

Manually drains the contents of the reservoir tank. Used primarily by service/maintenance personnel (eg: To ensure the tank is empty before control power is turned off.).

**CYCLE SELECT Function Key**

Selects the desired preset processing cycle that is to be run on the Washer. Four selections are available (1, 2, 3, 4).

**SETUP Function Key**

Used to access the selectable cycle phase settings for viewing or programming purposes.

**ENTER Function Key**

Used to enter changes to a cycle phase's selectable settings.

**MODIFY Function Key**

Used to designate a position where data is to be entered. Function is similar to that of a cursor.

**Up Selector**

Used to scroll in an upward direction through available selections and numerical values.

**Down Selector**

Used to scroll in a downward direction through available selections and numerical values.

**LCD Message Screen**

Shows pertinent information in a 2-line Liquid Crystal Display (LCD). Routine information includes cycle selection, cycle phase identification and timing, reservoir tank temperature, etc.

**Buzzer**

Sounds an intermittent alert at the conclusion of a processing cycle. Shuts off when the Washer door is opened.

## KEEP RECORD OF CYCLE SETTINGS

The Microprocessor Controller offers the operator a selection of four preprogrammed cycles (1, 2, 3, 4). Included in the program for each cycle are time/temperature settings that control the processing phases.

It is suggested that a record of these settings be maintained for quick reference.

**To view the settings for a particular cycle, 1) select that cycle by pressing the Cycle Select Function Key, then 2) press the Setup Function Key, then 3) scroll through the settings using the Up or Down Selector.**

The following chart format has been provided for the purpose of recording cycle settings.

**CYCLE SETTINGS**
**7620 Washer ID #:**

| SETTING DESCRIPTION | CYCLE 1 | CYCLE 2 | CYCLE 3 | CYCLE4 |
|---|---|---|---|---|
| **PREWASH** (hot or cold) | | | | |
| **PREWASH TIME** (seconds) | | | | |
| **WASH** (seconds/degrees F) | | | | |
| **RINSE 1 TIME** (seconds/degrees F) | | | | |
| **RINSE 2** (seconds/degrees F) | | | | |
| **LUBRICANT** (on or off) | | | | |
| **FINAL RINSE** (seconds/degrees F) | | | | |

## TO CHANGE CYCLE PHASE SETTINGS

To change any one, or all, of the selectable cycle phase settings for a particular cycle:

1. Select the cycle (1, 2, 3, or 4) by pressing the Cycle Select Function Key.

2. Press the Setup Function Key to access the cycle phase settings for the cycle that was selected in Step 1.

   The first programmable setting will be displayed.

   | | |
   |---|---|
   | **CYCLE 1** | **PREWASH** |
   | **0** | **COLD** |

   The top line identifies the cycle and the cycle's phase. The bottom line is the programmable setting. In this case it may be either 0 COLD or 1 HOT, depending on the type of water supply desired for use in the Prewash phase.

   To change from Cold to Hot, press the Modify Function Key: the numerical designator "0" (zero) will start flashing. Then press the Up Selector: the bottom line display will change to "1 HOT". Finally, press the Enter Function Key to enter the change - or - do nothing, the change will be entered automatically when the flashing stops (in 15 seconds).

   To change from Hot to Cold, press the Modify Function Key: the numerical designator "1" will start flashing. Then press the Down Selector: the bottom line display will change to "0 COLD". Finally, press the Enter Function Key to enter the change - or - do nothing, the change will be entered automatically when the flashing stops (in 15 seconds).

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 3.

3. Press the Up Selector to scroll the display to the next cycle phase setting.

   | | |
   |---|---|
   | **CYCLE 1** | **PREWASH** |
   | **TIME** | **xxx sec** |

   *Time Range: 0 - 600 seconds.*

   The top line identifies the cycle and the cycle's phase. The bottom line is the current setting for Prewash phase timing, in seconds. (If no change is desired, press the Up Selector to advance to the next display.)

   To change the value, press the Modify Function Key: the current numerical value "xxx" will start flashing. Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 4.

4. Press the Up Selector to scroll the display to the next cycle phase setting.

   | | |
   |---|---|
   | **CYCLE 1** | **WASH** |
   | **xxx sec** | **xxx F** |

   *Time Range: 120 - 600 seconds*
   *Temp Range: 140 - 180 degrees F*

   The top line identifies the cycle and the cycle's phase. The bottom line displays the current settings for Wash phase timing (in seconds) and temperature (in degrees F). (If no change is desired, press the Up Selector to advance to the next display.)

   To change the first value, press the Modify Function Key: the current numerical value "xxx" for seconds will start flashing. (If no change is desired, press the Modify Function Key again to switch to the current numerical value "xxx' for degrees F.)

Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To change the second value, press the Modify Function Key: the current numerical value "xxx" for degrees F will start flashing. Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 5.

5. Press the Up Selector to scroll the display to the next cycle phase setting.

| | |
|---|---|
| **CYCLE 1** | **RINSE 1** |
| **TIME** | **xxx sec** |

*Time Range: 0 - 600 seconds*

The top line identifies the phase and the cycle. The bottom line is the current setting for Rinse 1 phase timing, in seconds. (If no change is desired, press the Up Selector to advance to the next display.)

To change the value, press the Modify Function Key: the current numerical value "xxx" will start flashing. Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 6.

6. Press the Up Selector to scroll the display to the next cycle phase setting.

| | |
|---|---|
| **CYCLE 1** | **RINSE 2** |
| **xxx sec** | **xxx F** |

*Time Range: 0 - 600 seconds*
*Temp Range: 140 - 180 degrees F*

The top line identifies the cycle and the cycle's phase. The bottom line displays the current settings for Rinse 2 phase timing (in seconds) and temperature (in degrees F). (If no change is desired, press the Up Selector to advance to the next display.)

To change the first value, press the Modify Function Key: the current numerical value "xxx" for seconds will start flashing. (If no change is desired, press the Modify Function Key again to switch to the current numerical value "xxx" for degrees F.)

Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To change the second value, press the Modify Function Key: the current numerical value "xxx" for degrees F will start flashing. Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 7.

7. Press the Up Selector to scroll the display to the final cycle phase setting.

| | |
|---|---|
| **CYCLE 1** | **FINAL RINSE** |
| **xxx sec** | **xxx F** |

*Time Range: 60 - 600 seconds*
*Temp Range: 140 - 180 degrees F*

The top line identifies the cycle and the cycle's phase. The bottom line displays the current settings for Final Rinse phase timing (in seconds) and temperature (in degrees F).

To change the first value, press the Modify Function Key: the current numerical value "xxx" for seconds will start flashing. (If no change is desired, press the Modify Function Key again to switch to the current numerical value "xxx' for degrees F.)

Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To change the second value, press the Modify Function Key: the current numerical value "xxx" for degrees F will start flashing. Press the Up or Down Selector as required until the desired value appears. Then, press the Enter Function Key.

To exit the program at this point, press the Setup Function Key, otherwise proceed with Step 8.

8. Press the Up Selector to scroll the display to the optional portion of the final cycle phase setting.

   The top line identifies the cycle and the item lubrication portion of the Final Rinse phase of that cycle. The bottom line is the current ON/OFF setting for the item lubrication dispenser. In this case it may be either “0 OFF" or "1 ON". (If no change is desired, press the Up Selector to advance to the next display.)

   To change from OFF to ON, press the Modify Function Key: the numerical designator "0" (zero) will start flashing. Then press the Up Selector: the bottom line display will change to "1 ON". Then, press the Enter Function Key.

   To change from ON to OFF, press the Modify Function Key: the numerical designator "1" will start flashing. Then press the Down Selector: the bottom line display will change to "0 OFF". Then, press the Enter Function Key.

At this point all the selectable cycle phase settings have been displayed. Pressing the Up Selector one more time will bring up the Service Program Access display.

| | |
|---|---|
| **SERVICE** | **1** |

Use of this program is restricted to qualified service personnel only. Pressing the UP Selector again will bring up the Continuous Wash display.

| | |
|---|---|
| **CONT. WASH** | **0 OFF** |
| **xxxx sec** | **XXX ºF** |

This display is employed in the monthly maintenance procedure for descaling the Washer's recirculation system. See page 4-1.

9. Exit the program by pressing the Setup Function Key.

   Repeat Steps 1 and 2, if desired, to access the remaining three cycle programs.

## SPEED SCROLLING NUMERICAL VALUES

Holding the MODIFY Function Key depressed while manipulating an UP or DOWN Selector Key will enable the operator to scroll through numbers at a far greater speed than can be obtained by using a Selector Key alone.

# OPERATING INSTRUCTIONS

## PRIOR TO ROUTINE OPERATION

Always make sure a sufficient supply of detergent is available for the Detergent Dispenser before turning the Washer ON. Also, make sure the Dispenser's supply tube is properly inserted into its detergent supply container. (The same instruction would apply to an item lubricant supply system if that option is provided.)

## POWER ON - POWER OFF/RESET

Switching the POWER ON-OFF/RESET Switch to ON will turn on the Washer.

- The POWER ON-OFF/RESET Switch will light (green).
- The Controller will come on. The following message will be displayed on the Message Screen.

| **READY TO LOAD**<br>**CYCLE X SELECTED** |
|---|

## ROUTINE OPERATION: DETAIL

Instructions carried here apply to the daily operation of a Castle 7620 Washer. It assumes that the unit has been properly installed and pre-tested: that the chamber is clean, all four CYCLE selections are programmed, the detergent supply is set up, any optional equipment is ready for operation, etc.

1. Turn the POWER ON-OFF/RESET Switch to ON.

The following display will appear on the Controller's message screen:

| **READY TO LOAD**<br>**CYCLE X SELECTED** |
|---|

2. Load material into the Washer.
   (See also: Appendix A: Loading/Accessories)
3. Close and secure the door.

   The following message will appear:

| **PRESS START**<br>**CYCLE X SELECTED** |
|---|

4. Check/Change the cycle selection.

   Current cycle selection (1,2,3, or 4) is displayed in the bottom line of the message.

   Press the Cycle Select Function Key to change the cycle selection, if desired.

5. Press the Cycle START Push Button.

   The reservoir tank will begin to fill.

   The following message will appear:

| **FILLING** | **TANK** |
|---|---|

When the reservoir tank is full, the Prewash phase will start and the following message will appear:

| **CYCLE X** | **PREWASH** |
|---|---|
| **TIME** | **XXX sec** |

The top line identifies the selected cycle and the cycle phase that is currently running. The bottom line displays the time remaining in the cycle phase.

At the conclusion of the Prewash phase the following message will appear:

| | |
|---|---|
| **DRAINING** | **TANK** |

When the reservoir tank is empty the following message will appear:

| | |
|---|---|
| **FILLING** | **TANK** |

The reservoir tank will be refilled for the Wash phase of the processing cycle.

As the cycle progresses to completion, the following messages will appear:

| | |
|---|---|
| **CYCLE X** | **WASH** |
| **XXX sec** | **XXX ºF** |

(Time and Temperature displayed)

| | |
|---|---|
| **DRAINING** | **TANK** |

| | |
|---|---|
| **FILLING** | **TANK** |

| | |
|---|---|
| **CYCLE X** | **RINSE 1** |
| **XXX sec** | **XXX ºF** |

(Time and Temperature displayed)

| | |
|---|---|
| **DRAINING** | **TANK** |

| | |
|---|---|
| **FILLING** | **TANK** |

| | |
|---|---|
| **CYCLE X** | **RINSE 2** |
| **XXX sec** | **XXX ºF** |

(Time and Temperature displayed)

| | |
|---|---|
| **DRAINING** | **TANK** |

| | |
|---|---|
| **FILLING** | **TANK** |

| | |
|---|---|
| **CYCLE X** | **FINAL RINSE** |
| **XXX sec** | **XXX ºF** |

(Time and Temperature displayed)

| | |
|---|---|
| **DRAINING** | **TANK** |

| |
|---|
| **COOLING** |
| **PLEASE WAIT** |

Upon conclusion of the preset 30-second Cooling phase, an intermittent buzzer will alert personnel the cycle is complete.

The following message will appear:

| |
|---|
| **CYCLE COMPLETE** |
| **READY TO UNLOAD** |

6. Open the door and unload the Washer.

   When the door is opened the buzzer will stop and the following message will be displayed:

| |
|---|
| **READY TO LOAD** |
| **CYCLE X SELECTED** |

When the door is closed (whether the load has been removed or not), the following message will appear indicating that the unit is ready to run the next processing cycle.

| **PRESS START**<br>**CYCLE X SELECTED** |
|---|

To run the same cycle again, press the Cycle START Push Button.

To run a different cycle, use the Cycle Select Function Key to select Cycle 1,2,3, or 4, then press the Cycle START Push Button.

To discontinue operation, turn the POWER ON-OFF/RESET Switch to OFF.

## STOP (Using The Stop Function Key)

Pressing the Stop Function Key will immediately terminate a processing cycle. The following message will appear:

| **PRESS START**<br>**CYCLE X SELECTED** |
|---|

Depending on the nature of the situation that led to the use of the STOP Function Key, the operator may now (1) restart the washer, or (2) discontinue washer operation.

To Restart The Washer: Press the START Push Button.

- The reservoir tank will be drained automatically.
- After draining, the selected cycle will start.

  (NOTE: A cycle will only start when the reservoir tank is empty.)

**To Discontinue Washer Operation**: Press the DRAIN Function Key to drain the reservoir tank. After draining, turn the POWER ON-OFF/RESET Switch to OFF.

## STOP (Using The POWER ON-OFF/RESET Switch)

*This procedure is not presented as an alternative to the STOP Function Key. It should only be employed if circumstances prohibit use of the STOP Function Key.*

Turning the POWER ON-OFF/RESET Switch to OFF will immediately terminate a processing cycle. After termination, the Switch should be turned back to the ON position.

Depending on the situation that led to termination, the operator may now (1) restart the washer, or (2) discontinue washer operation.

**To Restart The Washer**: Press the START Push Button.

- The reservoir tank will be drained automatically.
- After draining, the selected cycle will start.

  (NOTE: A cycle will only start when the reservoir tank is empty.)

**To Discontinue Washer Operation**: Press the DRAIN Function Key to drain the reservoir tank. After draining, turn the POWER ON-OFF/RESET Switch back to OFF.

## OVERFLOW MODE

In the event that a solenoid or a reservoir tank level sensor malfunctions during one of the water fill periods of a cycle, a condition could result in which water overflows the reservoir tank and begins to fill the chamber. Should this occur, the rising water will be detected by the Overflow Sensor. Once detected, an alarm will sound, the Washer's drain pump will be turned on, and the following display will appear:

| **OVERFLOW MODE**<br>**CHECK FLOATS / VLV** |
|---|

Water will then be discharged through the drain system until the water level reaches the low level sensor in the reservoir tank. At that point, the alarm will shut off and the Washer will attempt to restart the "FILLING" stage of the phase.

| **FILLING TANK** |
|---|

If the attempt fails and the overflow condition re-occurs, the Washer will go back into the "OVERFLOW MODE". Water will again be discharged until the low level sensor is reached. The Washer will then attempt to restart the cycle once more.

The Washer will continue discharging and refilling in an attempt at self-correction for a period of three (3) minutes. Following this period, if the overflow condition persists, the unit will shut down (The alarm will continue to sound.).

The operator should then:

6. Press the STOP Function Key (The alarm will shut off.)
7. Press the DRAIN Function Key to ensure the chamber and reservoir tank are empty.
8. Discontinue Washer operation and notify qualified service personnel.

*If desired, the operator may discontinue Washer operation at any time during a ongoing OVERFLOW MODE by pressing the STOP Function Key.*

## MISCELLANEOUS

- If a door is unlatched during a cycle, the cycle will be automatically terminated. The cycle may then be restarted from the beginning (by pressing the START Function Key) when the door is once again closed and secure.

- All the Function and Selector Keys will be inoperative during a processing cycle, except for the STOP Function Key.

# MAINTENANCE

## DAILY

### INSPECT-CLEAN

Inspect exterior and interior surfaces of the Washer.

Clean with mild detergent and a soft, damp cloth. Give particular attention to the Drain Screen and the screen surrounding the water fill port.

### CHECK LIQUID SUPPLIES

Check the Wash detergent supply container. Refill or replace if required.

Check the Instrument Lubricant supply container if the unit is equipped for that option. Refill or replace if required.

## MONTHLY

DESCALE RECIRCULATION SYSTEM

Descaling the recirculation system prevents a buildup of mineral deposits on the reservoir tank, heating coils, etc. The procedure involves:

A. Removal and cleaning of the two Spinning Manifolds.

B. Treating the recirculation system with a descaling agent.

*Contact your Castle service representative for an appropriate scale remover - and follow directions for its use.*

### Procedure: Spinning Manifolds

1. Remove the two Spinning Manifold Assemblies from the Washer chamber. Each is secured to its plumbing fitting by means of a 3/4-18 Hex Head Bearing Housing.

2. Disassemble the two 5/16-18 Hex Head Screws from the ends of each Spinning Manifold Assembly.

3. Flush the interiors of the Assemblies to remove any accumulations of fine debris. Check the 3/32" diameter spray holes to ensure they are unrestricted.

4. Reassemble the Spinning Manifold Assemblies to their plumbing fittings. Do not reassemble the Hex Head Screws to the ends of the manifolds at this time.

### Procedure: Descale Recirculation System

1. Remove the drain screen from the chamber. Clean if required, and set aside. Close Washer door.

2. Ready a graduated container with the correct amount of descaler to be used per the descaler manufacturer's specifications. (Ref: Reservoir Tank Capacity =2-1/2 gallons)

3. Select any cycle.

| **PRESS START**<br>**CYCLE X SELECTED** |
|---|

4. Press the SETUP Function Key to access the cycle phase settings.

5. Press the DOWN Selector once to bring up the Continuous Wash display.

| **CONT. WASH 0 OFF**<br>**XXXX sec xxxºF** |
|---|

*Time Range: 30 - 9999 seconds*
*Temp Range: 120 - 180 degrees F*

6. Press the MODIFY Function Key twice (press - wait - press) to designate the seconds value for change. Then press the UP Selector as required to set the correct duration for circulation of the descaling solution.

   DO NOT PRESS THE ENTER FUNCTION KEY AT THIS TIME.

7. Press the MODIFY Function Key again to designate the temperature value for change. Then press the UP Selector as required until the correct temperature setpoint appears.

   DO NOT PRESS THE ENTER FUNCTION KEY AT THIS TIME.

8. Press the MODIFY Function Key again to move back to the "0 OFF" segment of the display. Then press the UP Selector once to switch the Continuous Wash to "1 ON".

9. Press the ENTER Function Key to begin the continuous wash. Filling will begin.

| **FILLING TANK** |
|---|

10. Open the door. Add the required amount of descaler to the Reservoir Tank. Then, close the door.

    The Washer will fill for approximately 30 seconds. If the door is not closed again within this period the Washer will automatically drain the contents of the reservoir tank. This would then necessitate restarting the procedure from the beginning.

    After "FILLING TANK" the following displays will appear as the Continuous Wash cycle progresses to completion.

| **CONTINUOUS WASH**<br>**XXXX sec xxxºF** |
|---|

(*Time and Temperature displayed)*

| **DRAINING TANK** |
|---|

| **COOLING**<br>**PLEASE WAIT** |
|---|

Upon conclusion of the preset 30-second Cooling phase, an intermittent buzzer will sound.

The following message will appear:

| **CYCLE COMPLETE**<br>**READY TO UNLOAD** |
|---|

11. Open the door. The following message will appear:

| **READY TO LOAD**<br>**CYCLE X SELECTED** |
|---|

12. Close the door. The following message will reappear:

The descaling cycle is complete, and the Washer is now ready to run one or more Continuous Wash flushing cycle to purge residual descaler from the system.

**To run a Continuous Wash flushing cycle repeat the entire procedure described above, minus Step 10.**

After the final flush, reassemble the 5/16" Hex Head Screws to the ends of the Spinning Manifolds.

### CHECK DISPENSER PUMP/TUBES

Check the Pump rollers and the supply tubing on the Wash detergent dispenser, and the optional Instrument Lubricant dispenser (if equipped). If components show evidence of wear, notify qualified service personnel for replacement.

## EVERY 6 MONTHS

### CHECK-CLEAN ALL Y-STRAINERS

Check the filter screens in all plumbing supply lines. Clean if required. Task should be performed by qualified service personnel.

# APPENDIX A: LOADING/ACCESSORIES

The information presented in this Appendix is intended to supplement the loading instructions on page 3-2 (Step 2) of the operating instructions.

Figure A-1 illustrates the use of the standard Bottom Grid.

**Loading**: To ensure optimal coverage of a load by the spray system, baskets no larger than 20 x 20" should be used.

**Processing**: Processing treatments are delivered through the top and bottom spinning manifolds. The Spindle Header Coupling remains closed.

Figure A-2 illustrates the use of a Spindle Header (with Bottom Grid removed).

**Loading**: Prior to loading, a Support Grid is placed on a Spindle Header to ensure that ware remains stablized during processing. The Header then slides into position on the tracks.

**Positioning**: The hollow Connector on the end of a Spindle Header is to seat firmly into the Spindle Header Coupling located at the back of the Washer chamber.

**Processing**: Exterior processing treatments are delivered through the top and bottom spinning manifolds. Interior treatments are delivered through the Spindle Header Coupling.

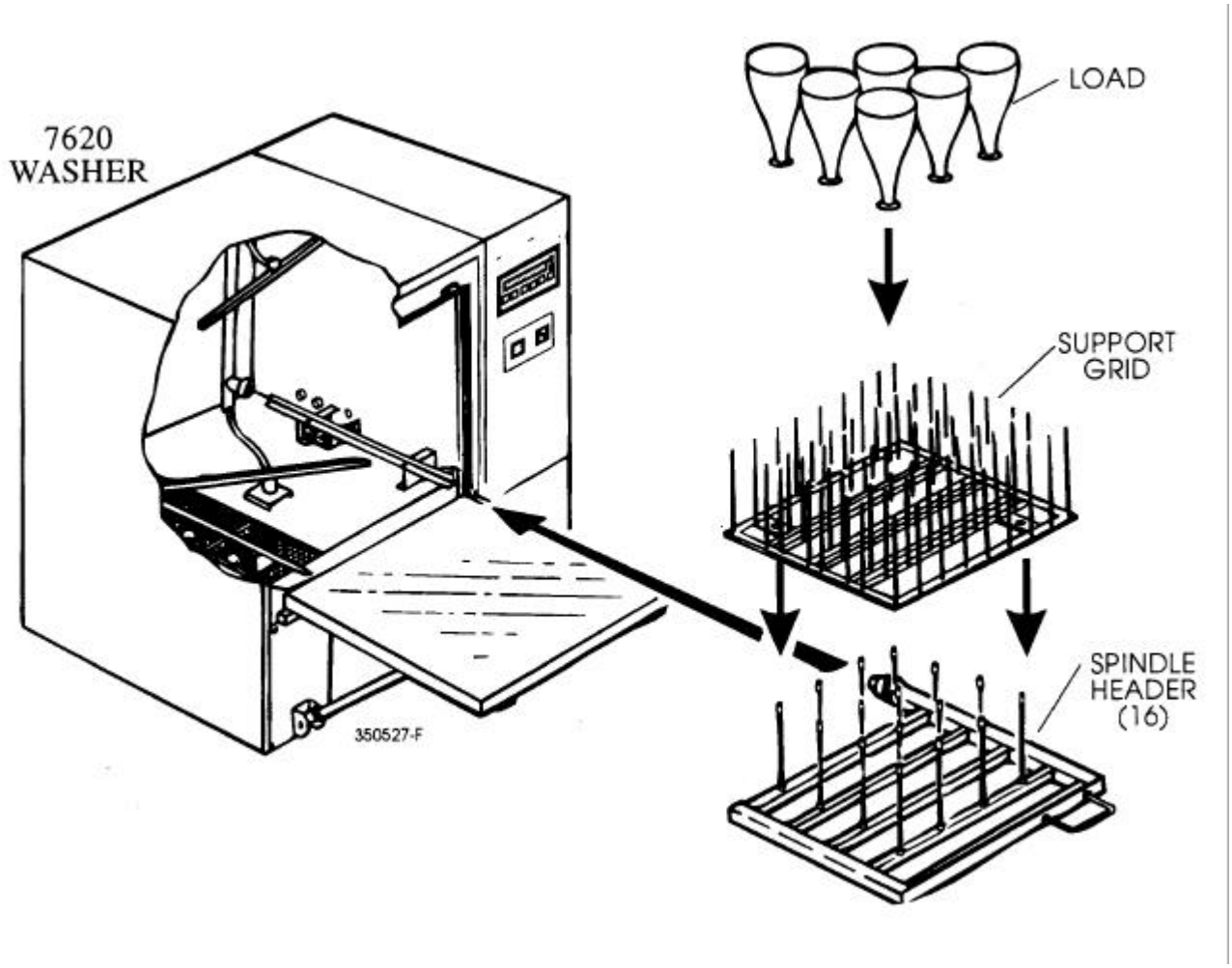


FIGURE A-1: BOTTOM GRID LOADING

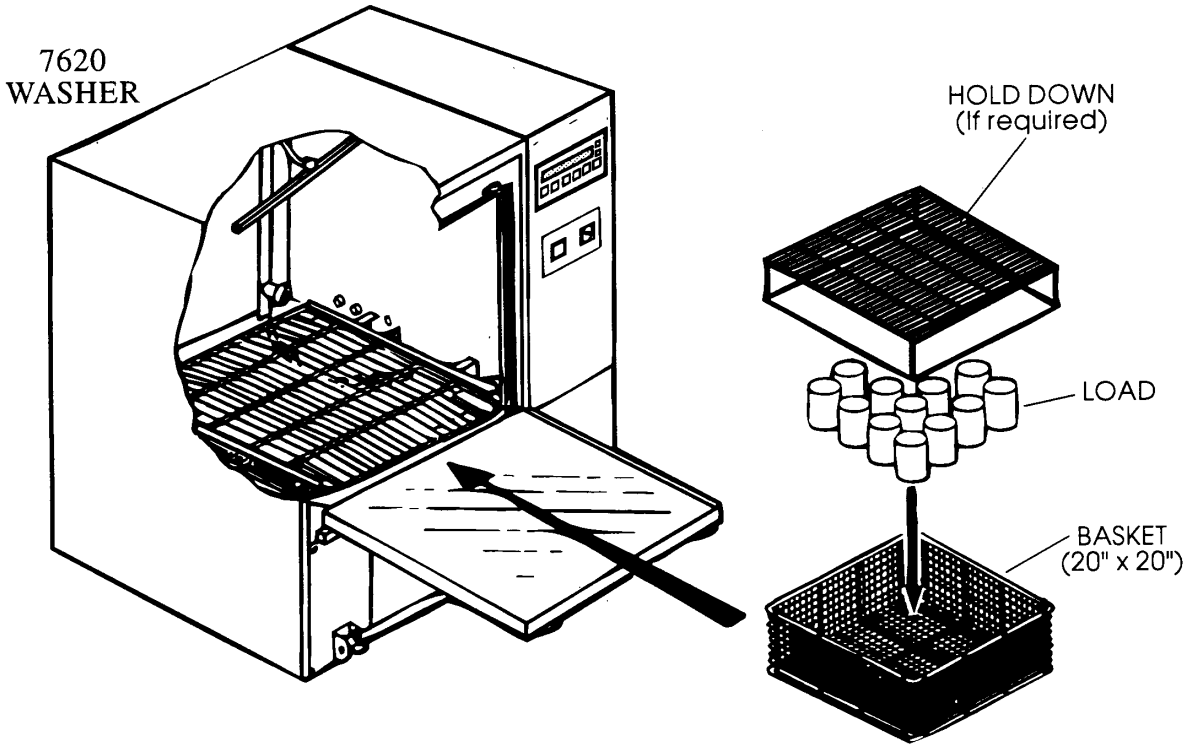


FIGURE A-2: SPINDLE HEADER LOADING